



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,096	09/09/2003	Bamdad Bahar	1004272.108US 07694624US5	9845
27123 7590 09/29/2010 MORGAN & FINNEGAN Transition Team C/O Locke Lord Bissell & Liddell 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER MARTIN, ANGELA J	
			ART UNIT 1795	PAPER NUMBER
			NOTIFICATION DATE 09/29/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Shopkins@Lockelord.com
OWalker@Lockelord.com

Office Action Summary	Application No. 10/657,096	Applicant(s) BAHAR ET AL.	
	Examiner ANGELA J. MARTIN	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,6,8-10,12-15,17,24,25 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 6, 8-10, 12-15, 17, 24, 25, 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the Amendment filed on July 20, 2010. The Applicant amended claims 1, 5, 10; and canceled claim 31. However, the rejection is made final for the following reasons of record.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 8, 9, 12-14, 24, 25, 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohashi et al., EP 0503147 A1.

Rejection of claims 1, 3, 8, 9, 12-15, 24, 25 drawn to a polymeric membrane.

Ohashi et al., teach a substantially air impermeable polymeric membrane comprising a polymeric sheet comprising polymer and having a porous structure, the sheet having distributed in the polymer: metal (abstract; p. 2, lines 36-49), and the porous structure is at least partially filled with an ion-exchange particles to provide ionic conductance (p. 10, lines 20-38). It teaches the polymeric sheet has distributed therein a precious metal (p. 7, lines 19-21 and 37-40). It teaches the sheet has platinum (p. 7, lines 40-42). It teaches polymeric sheet has platinum supported on substrate (p. 7, lines 45-53). It teaches the polymeric sheet has metal distributed therein (p. 8, lines 10-12). It teaches the polymeric sheet has organic polymer distributed therein (p. 12, lines 45-59).

Art Unit: 1795

It teaches the polymeric sheet has a thickness of less than 50 microns (p. 12, lines 45-49). It teaches the membrane is disposed between two fuel cell electrodes (col. 3, lines 30-43). It teaches the ion-exchange membrane is fluorinated (p. 12, lines 45-59). It teaches the polymeric sheet has a thickness of 40 microns (p. 12, lines 45-49). It teaches polymeric sheet comprises a porous polymeric film and resin is a polymer different from the polymeric film (p. 10, lines 20-36). It teaches a porosity of 15 to 95% (p. 3, lines 2-4).

Thus, the claims are anticipated.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 6, 10, 15, 17, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al., EP 0503147 A1, in view of Murphy, U.S. Pat. No. 6,059,943, and in further view of Koslow, U.S. Pat. 5,147,722.

Ohashi et al., teach a polymeric membrane as described above.

Ohashi et al., do not teach the polymeric sheet has distributed therein fumed silica; sheet has distributed therein fumed silica; polymeric sheet is expanded porous PTFE; sheet has thickness of 38 microns and comprising the claim

Art Unit: 1795

limitations of claim 17. It teaches PTFE film having fibrils and nodes (p. 8, lines 15-17).

Murphy et al., teach a substantially air impermeable polymeric membrane comprising a polymeric sheet (col. 10, lines 48-57) comprising polymer and having a porous structure (abstract), the sheet having distributed in the polymer: inorganic particulate (col. 8, lines 47-51), metal (col. 8, lines 52-58), organic polymer (col. 8, lines 58-62), or a combination (col. 8, lines 47-62), and the porous structure is at least partially filled with an ion-exchange particles to provide ionic conductance (claim 1). It teaches the sheet has titania (claim 4).

Murphy et al., do not teach the polymeric sheet has silica or fumed silica distributed therein.

Koslow teaches a polymeric membrane comprising ion-exchange resin (col. 25, lines 15-35) wherein the polymeric sheet has silica or fumed silica distributed therein (col. 16, lines 65-67 and col. 17, lines 1-7).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Koslow into the teachings of Ohashi et al., because Koslow teaches that the addition of fumed silica can alter the stiffness of the membrane and improve the strength of the structure. With respect to the claim limitations in claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose an optimum thickness and porosity, since it has been held that discovering the optimum value of a result effective variable

Art Unit: 1795

involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

5. Applicant's arguments filed 7/20/10 have been fully considered but they are not persuasive. The Applicant argues that "none of the three cited references, Ohashi, Murphy and Koslow, teaches, discloses or suggest 'an interior volume of the porous structure of the polymeric sheet is substantially occluded by the ion-exchange resin'". However, the prior art of record, Ohashi, still reads on "interior volume" since "interior volume" encompasses any sub-surface of the pore. Whereas the nodes and fibers as mentioned in paragraph 0093 of the publication of the application, appear to not be taught by the prior art of record:

[0093] A product of the invention is depicted in FIG. 4. A composite membrane 10 is provided which is made up of a microporous polymeric sheet comprised of nodes 11 and fibrils 12. In some embodiments, the sheet can be comprised of only fibrils. The nodes and fibrils are covered, at least in part by functional material 13. The space between the nodes and fibrils is then filled, preferably, completely (i.e., no air flow through) with the polymer electrolyte. Preferably the interior volume of the sheet is substantially occluded by the electrolyte.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1795

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA J. MARTIN whose telephone number is (571)272-1288. The examiner can normally be reached on Monday-Friday from 10:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM

Examiner, Art Unit 1795

/Dah-Wei D. Yuan/

Supervisory Patent Examiner, Art Unit 1795